

From Malraux's Imaginary Museum to the Virtual Museum

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A romanesque crucifix was not originally a sculpture, Cimabue's Madonna was not a picture, nor was Phidias's Pallas Athena a statue. (p. 11)

Thus does André Malraux begin his *chef d'oeuvre* on the imaginary museum (Malraux 1951). It deals with the transformation of a work of art, of how its meaning changes when exhibited in a museum. In a museum, a crucifix becomes a sculpture, an image of the Virgin is a picture, a sacred effigy a statue. Malraux deeply questions the ultimate meaning of this great transformation.

This he has done in more than 600 words of closely packed, penetrating and illuminating prose, with almost 500 illustrations mainly of photographs in black and white. The book was written almost half a century ago and conceived before the European war that so cruelly cut off millions of human lives, destroying and dispersing a significant portion of mankind's artistic heritage. It is a testimony to the turbulence of his time and, at the same time, a voice of hope. Malraux analyzes the new role of photographic reproduction in bringing to us the works of art of the whole world in a new format, on an accessible universal platform. This imaginary museum of Malraux's is not a volatile product of the imagination but a great world collection of images reproduced thanks to modern technology. We would now say it is both the product and a symptom of "globalization."

What Malraux predicted is at present coming true beyond his visionary expectations. As it is, digital technology has separated the photograph from its paper support, has promoted the expanded projection of high fidelity color images and, finally, has made the public independent of the exhibition hall, of the auditorium and the lecture room. We are witnessing a new transformation in the meaning of a work of art and

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the birth of the virtual museum, a new kind of museum which is the product of the prodigious evolution of the imaginary museum. We shall try to show in what follows the articulation between both and the real museum.

The changing significance of the work of art in the museum

It is convenient to begin with Malraux's master description of the significance of a work of art and the function of the museum, which we can apply to all kinds of museums, whether real, imaginary or virtual.

The role of museums in our relationship with works of art is so great that we have difficulty in thinking of museums as non-existent in those place where modern European civilization is, or was, unknown. This relationship has existed for us for scarcely two centuries. The nineteenth century lived off it and we continue to live off it, but we forget that museums have imposed on the viewer an absolutely new relationship with respect to the work of art. (pp. 11–12)

Malraux is writing of the twentieth-century museum but, as we shall see, we are certain that his ideas will continue to be valid in the twenty-first century. He refers to the transformation of the purpose or classical model of a work of art. In fact, museums in the western world,

have contributed to freeing works of art from their expected performance, to change even portraits into pictures. Caesar's bust or the equestrian statue of Charles V are still Caesar and Charles V, yet the Duke of Olivares is only a Velazquez. What do we care about the identity of the man with the helmet, the man with the glove? They are Rembrandt and Titian. The portrait, especially, has ceased to be someone's portrait. (p. 12)

We could add that even the self-portrait of the painter has ceased to refer to his person. Let us take the case of the recent retrospective at the London National Gallery¹ where some thirty self-portraits of Rembrandt and numerous sketches and engravings were exhibited. They certainly show the passage of time in his long life, we are moved by their implacable realism or fantastic genius but, above all, those masterpieces imply a spiritual universe rather than their flesh and blood creator.

Malraux's central idea is that we are witnessing a "change of function" for the original artwork when we admire it in a museum. The fact that the artwork has been moved to an environment especially designed to show it off would of itself merit a more detailed analysis but we would be trespassing into the field of museum expertise, a fascinating field but one which takes us away from our subject. It is enough to observe that when faced with the "man in a golden helmet" the visitor bends down to read the name of the painter. He is interested in the attribution of the artwork. An unforgettable show took place in 1996 at the Metropolitan Museum of Art in New York on the subject of the many attributions given to Rembrandts at different times in the history of art. (von Sonnenburg 1995).

Almost six million people from all parts of the world visit the Louvre yearly: are they coming to see *The Gioconda* or a Leonardo da Vinci? Both the portrait of a beauty of Renaissance Florence and the genius of the artist will remain eternally linked for the present-day viewer, who is probably a greater admirer of the painting than of the lady's beauty. But this was not always so. In a contemporary description, an amateur visiting Fontainebleau relates: "There was also an oil painting of a certain lady from Lombardy (sic) a very beautiful woman, but to me not as beautiful as Madame Gualanda" (Cox-Rearick 1996). This admirer compared Lisa Gherardini dei Giocondo, wife of Francesco dei Giocondo, with Isabella Gualanda, a friend of Giuliano di Medici. His comment did not refer so much to Leonardo's painting but to the features of two very beautiful women. In this our amateur coincided with Leonardo's own commentary: "Can't you see that in human beauty it is the beauty of the face that amazes passers-by and not the richness of the adornments?" Moreover, in the catalogue of 1614 prepared by Sébastien Zamet, superintendent of the royal palace, item 78 is listed as "une joconde" (sic) with no mention of the painter! The subject of the painting at the time was more important than its creator. But the modern museum has produced a radical change in the history of art. As Malraux justly says,

Until the XIX century, all works of art were the image of something that existed – or did not exist – before, prior to being works of art. Only to the eyes of the painter was the painting a painting; many times it was also poetry. And the museum suppressed from almost all portraits (even if only of a dream) almost all its models, at the same time that it forced works of art away from their function. (p. 12)

In a certain sense, the visitor to a museum enters an atelier empty of its models, there is no one posing, not a flower or a wine cup on the artist's table. There is only the painting as such and that is why it acquires new significance. When the painter's oeuvre enters the museum it is exhibited to the public in the context of a museum of "paintings" rather than of "pictures." The museum being open as well to a wider public not necessarily of experts or amateurs, has changed its function. In effect, the galleries of the great European collectors of the past – emperors, kings, popes, nobles, bankers, cardinals – were centers for a daily contact with beauty, for conversation, places for "sensual and intellectual delight." Francis I had copies of his exceptional collection of more than fifty masterpieces on exhibition in the royal baths at Fontainebleau for the enjoyment of his courtiers and guests. These treasures centuries later became the heritage of the Louvre Museum. What's more,

The museum never knew a palladium, a saint, or Christ, or object of veneration, of similarity, of imagination, of decoration, of possession; only images of things, different from the things themselves, deriving from this difference its reason for being. (p. 12)

This is Malraux's central thesis. The museum has created an essential difference: the transmutation of an esthetic value. In a sense it is a transfiguration which leads to a confrontation of metamorphoses.

Before the existence of the museum,

The work of art had its associations: the gothic statue to the cathedral, the classic picture to contemporary decoration, but not to other works spiritually different. It was isolated from the rest for better appreciation. (p. 12)

The museum is a collection of pieces the unity of which is always in question. Only through an intellectual effort can we come close to art as different from each other as an African mask and a Renaissance painting. But both artworks are housed under the same roof in the great museums. We may well ask ourselves what is their common denominator, what is the fundamental fraternal relation between them that makes them members of the same family. It is an eternal question. Each age gives a different but always imperfect and incomplete answer.

Museums continue to be built, some collect more crowds and receive more visitors than entire cities. The ensemble of museums, large and small, important and not so important, exceeds all description. Their variety is incommensurable but all museums have in common one fact: the art they keep acquires a new life "because it is shared." Even where only one unique and isolated jewel is kept, as is the case of *The Burial of Count Orgaz* which although alone in the chapel of the Conception in the church of Santo Tomé in Toledo also participates, like a voice singing solo, in the fantastic concert offered by El Greco's city.

Mythology gave the name of Museum to the sacred home of the Muses of the arts and sciences: Erato, Euterpe, Calliope, Clio, Thalia, Melpomene, Terpsichore, Polymnia and Urania, daughters of Zeus and Mnemosyne. The virtual Museum also has its own muse. The new born is called *Dactylia*, she is the "digital Muse," with an infinity of fingers ... We mortals cannot begin to count her fingers and the art of all times incessantly honor her in pictures, sculptures, jewels and icons. All those digits pray, caress, embrace and play a game without end. It is the game of *Dactylia*, the divine beauty that illuminates the *virtual museum*.

Museum was also the name of the first "university" in the West: the Museum of Alexandria, founded by Ptolemy I Soter and by a Greek philosopher, Demetrius Phalerius (345–293 A.C.), a student of Theophrastus the great disciple of Aristoteles at the Lyceum in Athens (Pyenson 1999). The library of the museum, the celebrated Serapeum, was one of the wonders of classical antiquity. The museum was visited by geniuses such as Euclid, Eratosthenes and Archimedes. We should never forget that beauty and truth are essentially united not only in metaphysics but culturally. Malraux guides the discussion on museums to the root itself of the artistic act as one of human creation and revelation of its supreme mission.

To the "pleasure of looking," the succession of schools and their apparent contradictions contributed awareness of a passionate search to recreate the Universe vis-à-vis Creation. After all, the museum is one of the places that give the highest idea of man.

And the highest idea of mankind derives from man being in the image and likeness of his Creator. In man's intimate nature we find the spirit. We can now harvest its fruits because we know its origin.

The value of reproductions

The work of art has an admirable quality in that it invites reproduction. First of all, in the mind of the observer. But the mental process of recollection is not a copy but a reconstruction. The psychology of the twentieth century has made us aware of the subtle mechanisms for coding and decoding visual images, of the time scale involved in a short and transient memory or a long and a permanent one. Malraux questions the role of memory in many of his books, in particular in his *Antimémoires*. He is conscious of its limitations and deformations. That is why he analyzes with the greatest care the difference between the original work and its reproduction. We have forgotten, but the visitor to an European museum in 1900 had very few copies or engravings at his disposal and only black and white photographs. It was therefore not easy to establish comparisons. The geographic distance between museums was also a "mental distance." As Malraux so admirably states,

the comparison of a picture in the Louvre with one in Madrid or Rome was between a picture and a thing remembered. (p. 14)

The cultivated visitor was a great traveler to the celebrated museums and the rich could buy engravings of the masterpieces and the others made do with photographs. All had to appeal to their memory, some took written notes or sketched a drawing. Artists, in their turn, went to the museums to copy from genius as part of their education and also as a source of income. There were copies for all tastes and pocket-books. But, in truth, many reproductions were faulty and inadequate.

One knew the Louvre (and only some sections at that) which we remembered as best we could. Now we have a greater number of significant works to remedy the weakness of our memory than are stored in the largest museum. (p. 14)

The situation continues to improve constantly thanks to new digital techniques for mass reproductions of the highest quality. Some of the great museums have projects for digital format reproductions, accessible via the internet, of the whole of their collections. Thus the Hermitage already has 2,000 works in a high-resolution digital format. Such reproductions constitute the enormous and magnificent heritage of the imaginary Museum which extends today to the virtual Museum, a museum that did not exist and was certainly unthinkable in the nineteenth century. At the end of this millennium, as Malraux said,

an imaginary museum has opened that will push to extremes the incomplete confrontation imposed by real museums. In response to this, the fine arts require being printed. (p. 14)

What is that printing? The answer for Malraux's generation could only be photography. For us there is another answer, digital reproduction. To verify this we must now travel the road from the imaginary Museum to the virtual Museum. The concept of

“virtual reality” was unknown in Malraux’s time but it will be this virtual reality – and no other – that “will push to the extreme” our confrontation with the “original reality” of the work of art. “Art printing” for the twenty-first century will be decidedly “digital” and bits will replace the written word and pixels the grain of photography. The computer with its accessories and networking is the printer of the new digital era, of the new virtual culture.

A fictitious art

Malraux embodied in his own life how a written culture could be enriched by an image culture. He was one of the greatest writers of his time and in his illustrated books on art he took advantage, as few others, of the new culture of the graphic image. Besides, in an admirable decision he changed the appearance of French monuments. The façades of buildings in Paris were cleaned and what people saw was wonderfully transformed. He uncovered what had been hidden.

The history of art for the last hundred years is the history of what can be photographed. (p. 28)

The imaginary Museum consists, in effect, of “mass reproductions” of works of art, in all forms and formats. But not only of this. Due to its peculiar dynamics reproduction in turn generates novel actions and attitudes with respect to the work of art. Malraux was aware of this paradox, of this feedback between reproduction and artistic creation.

At the same time that photography offered artists a profusion of masterpieces, the artist’s attitude to a work of art underwent a change. (p. 15)

In effect, the photograph was then a poor relative to an engraving. While the latter was used almost exclusively for acknowledged masterpieces, the photograph helped to popularize less important or forgotten works of art. But the constant progress and perfection of the tremendous photographic accumulation produced an unplanned fundamental change in artistic conception as such. Art was looked at in a different way. Specifically, photography made the most diverse objects equal, creating new families, suggesting new relationships and shared styles.

A photograph in black and white relates the objects it represents wherever there is a connection. A tapestry, a miniature, a picture, a sculpture and a medieval vitraux, all very different objects, become related when reproduced on the same page. They have lost their color, their material (sculpture some of its volume), their dimensions. They have lost specificity to their common style. (p. 18)

What happens when color, material, volume and even dimensions are lost? A reproduction devoid of those essential attributes certainly cannot be like the original. It is a different work. But thanks to this loss it also gains something. And this is the

secret of magic transmutation. It finds, says Malraux, its "style," in a very real sense it finds synchrony with other works that seemed unrelated to it. Malraux thus broaches complex subjects that today are in the domain of general linguistics. He restates the language proper to photographic reproduction, he alerts us to a syntax that exclusively addresses the relations between images, that abstracts their original sense. Van Gogh wrote to his brother Théo "we cannot do otherwise than make our pictures speak" (Plazy and del Moral). We should now, perhaps, build a new "grammar of style" to also be able to express ourselves in the field of graphic art reproductions.

One of the principal themes is the effect in reproduction of the altered scale of the work of art. So much so that fearing falsifications, many museums forbid a copy in the real size of the original. But this is a subject for lengthy analysis. The visual sciences teach us precisely the consequences of a loss of size constancy (and of color and shape). Malraux dared to pose this from the point of view of art.

The development of reproduction also acts more subtly. In an album, in an art book, objects are mostly reproduced in a similar format. In fact, a stone Buddha twenty meters high is no more than four times as large as a Tanagra figurine ... Scale is lost. (p. 18)

This is very important. In ordinary life, for example, when we see a car in the distance we still recognize it as such and it does not suddenly become to us a miniature or a toy car. Up to a certain distance the visual object "keeps" its size because our brain has developed mechanisms to preserve the scale of objects within certain limits. When we exceed those limits the result is a brutal and sudden alteration of our field of perception. When we lose scale there really occurs a "visual catastrophe." This happens to us, for example, when we fly up in an airplane or climb a very tall building. Up to a certain height we recognize buildings, trees and cars as familiar objects but over that limit, suddenly, the whole panorama becomes a miniature. We have "changed scale." The original size-preserving mechanisms no longer operate. Something similar occurs with photographic reproductions: it is possible to change, at will, the scale of objects. This manipulation of scale has very interesting consequences. In a certain sense the original artwork is enriched. It provides a new vision. For example,

The art of the steppes was a subject for specialists, but when the bronze or gold plaques are shown on the same page above a roman bas-relief, they become bas-reliefs as well. Photographic reproduction frees them from the servitude of belonging to a minor art. (p. 20)

To show this, Malraux presents on the same page and in the same size a first-century Western Siberia depiction of an animal fight and the famous twelfth-century bas-relief in the Autun Cathedral showing Eve bending to pick the apple off the forbidden tree. The confrontation between a simple mythological scene in the steppes and a powerful evocation of Genesis, the first small in size, the second a large horizontal stone relief, is suggestive. The imaginary Museum is the ideal place to establish these unexpected relations, where style transcends form and matter. It has given place, says Malraux, to "fictitious art." The consequences of a simple photographic amplification or reduction

are incalculable and sometimes open up new styles in art. When the scale of a work of art is "falsified," niches of new meaning may be discovered.

Reproduction has made art fictitious (as happens with the novel where reality serves fiction) when it systematically falsifies the scale of objects and presents the figures on oriental seals and coins as if figures on columns, and amulets as statues. Furthermore, the unfinished execution resulting from the small size of the object becomes in the amplified photograph a large style, one with a modern accent. (p.22)

No one can doubt the value of photographic reproduction for the detailed study of a work of art. Moreover, it is frequently the only available means to fill in gaps in our historical knowledge. Many times large works have disappeared and we only have the testimony of the smaller ones. The style of these last makes us infer that of the major artworks when we use our imagination on the amplified photographs of the smaller surviving specimens. This is what Malraux has to say,

Sometimes reproductions of minor artworks suggest certain grand styles that have disappeared, or that were possible. The number of great works of art prior to Christianity that have come down to us is insignificant compared with the number that have been lost. (p. 22)

In summary, the imaginary Museum of reproductions incites us to provoke the metamorphosis of the original object, it invites us to discover and exhibit as a novelty that which was implicit in the art work but not apparent to the naked eye.

The photo album isolates both to metamorphose (through enlargement) and for discovery (when it isolates a landscape in a Limbourg miniature) and so changes it into new art or for exhibition. (p. 25)

It sometimes allows us to better expose the artistic quality of a particular work of art.

An art album on Oceania (Guiart 1963) in making us familiar with 200 sculptures reveals the quality of some of them. Familiarity with a large number of works of a same style determines the masterpieces of that style, because it forces us to understand the particular meaning of the style. (p. 17)

We come here to an issue of high educational value. For some time now the museums of the world summon multitudes with their famous "retrospective shows," which serve to appreciate a large number of original works usually dispersed or inaccessible. The imaginary Museum is eminently suited to this; as it is a "bespoke museum" as well as a "portable museum" with an infinite number of works of interest to us. Just as a musician can leaf through a score and enjoy the music without hearing it, in the same way a visitor to the imaginary Museum can visualize a reproduced artwork without actually seeing the original. In a luminous metaphor Paul Claudel used to say "close your eyes and you will see."

The musician and his score and the art lover and his reproduction “reconstruct” sound and visual images. In this capacity to reconstruct lies, precisely, one of the greatest contributions of the virtual Museum. We are dealing with a reconstruction that goes far beyond the photographic images of the imaginary Museum. Let us see some examples. There are few things as attractive as turning a Greek statue around on its pedestal. Some museums permit this, by nature the act of the sculptor in his studio or, in the case of an antique bowl, of the potter at his wheel. But it is not the usual thing. However, digital technology allows manipulating the art object without any risk. There are programs or applications that allow *rotating* a solid body in virtual space, including the shadings of dark and light. Many virtual Museums also offer the possibility of moving about, of walking through the rooms and contemplating the works of art one by one. New York’s *Frick Collection* is one. Nothing is more appropriate to Malraux’s imaginary museum than this leisurely visit.

But we can go even further in virtual space. As an implicit corollary of the theory of fictitious art, there are actually some virtual museums that have no existence in the real world! In digital jargon they are called web-only museums. These totally fictive museums have the peculiarity of inviting the visitor to a place that only exists on the web, although in the case of Montevideo’s Virtual Museum the designers have invented a photomontage of a virtual building in a very well known park of that Uruguayan city. In these “only virtual museums” the visitor enters the simulated building, sees the billboards, decides what exhibition to see, climbs the stairs and contemplates art hung on virtual walls. An interesting exhibition of the Uruguayan painter Pedro Figari is shown in a virtual salon in the Montevideo Virtual Museum. And this poses an interesting question that duplicates the one on fictitious art. These works by Figari are reproductions of his original paintings, but they could well be mere “digital reconstructions” of perhaps non-existent works, hung on non-existent walls. Digital art will keep the matter permanently open to discussion. It is a new challenge which the digital culture brings to art and other fields.

Art forgeries are a problem central to modern museums, and can also become troublesome in virtual space. Malraux devotes several pages to the analysis of art forgeries and a detailed discussion of the work of Van Meegeren, the Vermeer forger. This celebrated forger presumed to rival Vermeer as an artist; he did not think of himself as an imitator but as a competitor, and that was his strange defense at his famous forgery trial, but his case was unusual. In general “the traditional forger (as Malraux says) does not try to compete with genius, he tries at most to imitate the manner or, in the case of anonymous artists, the style” (p. 369). We shall surely see many varieties of fictive art in this new digital culture, from pure forgery at one extreme, to the creation of art objects of impossible execution in real life but feasible in the world of digital make-believe.

Real and virtual visits

A visit to the virtual museum allows us in effect to carry out a series of instructive actions that exceed the limits of the mere photographic reproduction dear to Malraux. Viewing the computer screen one can walk down a gallery exhibiting artworks, close

in on a particular one, zoom into the details and if necessary save that image and print a paper copy for personal use, and also obtain information on the work and the artist. In some cases one can participate as well in a guided virtual visit, eventually accompanied by *voice* and sounds.

It is worth stopping for a moment to consider some differences between a real visit and a virtual one. First of all, two different museums are concerned. In other words, photographic or digital reproductions are not original works but more or less successful replicas on different support systems. Leafing through an album of reproductions or visiting a website are significantly different acts from walking through a museum. The difference is obvious from all points of view, but nevertheless needs emphasizing. Malraux never thought of his imaginary museum as a substitute for a real one, but as a particular extension of the latter, with specific functions of artistic appreciation and historical research. The same occurs with virtual museums. A new door, inexistent in the past, has been opened to access the museum. But the visitor is also a special visitor, a *virtual one*. It is a different visit. Even many of these visitors are not human, but programs in search of information. In future these agents or robots may report to their "owner" that there is a particular exhibit or art piece worthy of a visit. There are millions of people today who use this digital door to visit museums, they are a new breed of remote visitors.

The lesson is that we must take good care of this new public. Access must be made easier. In the same way that ramps help invalids to move around a real museum, something analogous will be needed in the virtual museum. Systems have now been developed to make websites accessible to disabled users. It is advisable then that virtual museums take this need into account and eliminate barriers to virtual visiting, because we believe there is not sufficient awareness in this respect. In brief, we propose an act of solidarity by the art community: the *accessible* virtual museum.

We must also use this means to educate the occasional visitor. For example, "learning how to look at a picture" as is done by the Prado Museum, where every month a masterpiece is exhaustively analyzed on the internet. However, the subject of education exceeds the traditional museum program, guided visit or lecture. Today education has become one of the most important activities of a museum and takes multiple forms according to circumstance and place. The virtual museum has also opened up this *educational* niche with enormous success, helped by a great *academic* and *research* effort.

Finally, one of the most instructive comparisons is the relationship between the number of real visits and virtual ones per year.

The number of virtual visits to museums is in general less than the real visits, except for the equal number of visitors to the Washington National Gallery of Art. Perhaps the trend in time will be for virtual visits to become more frequent and even outnumber real ones.

This new cultural phenomenon has become an important field of museum activity. The process seems irreversible but we cannot forget that there are still many real museums that do not have a site on the internet. Some are working on it with international help, as is the case of St. Petersburg's Hermitage with one of the most elaborate sites in the world operated by IBM. Others have been satisfied with no more than a brochure on the net but the world's most important museums pay particular

attention to these virtual visits and earmark large amounts of money and creative resources to maintain interest in their site. This virtual dimension is absolutely new. Malraux could not imagine anything like it, but surely, had he known it, he would have been one of its most enthusiastic supporters.

There is a collateral but equally important subject relative to genuine funding for the museum via the digital network. In some sites virtual visitors can shop long distance in the museum *shop* via the internet. For example, the MOMA's select *boutique* which offers reproductions, books, catalogues, CDs, sculpture and jewels is available to the remote visitor who can have his purchases mailed to his home and charged to his credit card. The economic contribution of this can be significant; we must not forget that some museums such as the Bilbao Guggenheim get as much income from their shops as from the visiting public. Certainly, with increasing expansion of the virtual visitor market via the internet this activity will become an important contribution to the museum's upkeep.

In summary, the virtual museum has ceased to be a simple reflection of the real one; it has developed a life of its own, no longer satisfied with informing and exhibiting but challenging to action and discovery. Let us see some examples. A friend of mine was interested in the *Tetragrammaton*, the "magic square" symbol widely used in Renaissance iconography. I remembered having seen it on a 4×4 number table hanging on a wall in Albrecht Dürer's famous engraving of 1514, *Melancholy*. I knew that Washington's National Gallery of Art kept a very valuable collection of Dürer's engravings and I found there a sufficiently clear copy showing the columns, lines and diagonals of the magic square in the engraving. I was pleasantly surprised to find dozens of Dürer engravings on show in the virtual museum and among them the one I sought. I quickly obtained a beautiful image of the work and zoomed in to the details of the inscription. Deciphering was difficult because some symbols were incomprehensible to me. Then I proceeded to a slow decoding on the basis of the arithmetical properties of the square. I remembered that the sum of the columns, diagonals and lines always gave the same number. Little by little, adding the numbers I managed, not without work, to decipher and consistently reach the number 34, another magic number. I completed the table correctly and sent it to my friend via the internet. All of this was done without leaving my house, thousands of kilometers away from Washington. Incidentally, this research certainly took me less time as a remote visitor than it would have as a real visitor.

Furthermore, in general, in a real museum not all its collections are on show and many will always remain inaccessible to the public due to their fragility. In the Chantilly Museum, where the *Très riches heures du Duc de Berry* is kept, there is a warning: "Your attention please! These works are so deteriorated that you can only see them on the internet!" Incidentally, here we see another very significant advantage of digital reproduction, when the original is inaccessible to the public because of its fragility and rarity.

On the other hand, in the same way that educational activities exist in real museums, so are they present in virtual museums. It is evident, in this sense, that Malraux's dream has come true. One notable example is the *QBIC (Query by Image Content)* program of the Hermitage Museum which lets us experiment with one of Malraux's most pleasant fancies, i.e., playing with visual associations to create style

families. For example, the virtual visitor can select a color from a continuous spectrum and paint a variable band in a picture and entirely cover it in different colors. To try this out I chose only three, a certain blue, green and yellow shades in different proportions, that reminded me vaguely of the colors used by Matisse. To my surprised admiration there immediately appeared on the screen a series of paintings from the museum's collection, including two paintings by Matisse, *Woman on the Terrace* and *View of Colliure* which I never knew existed, besides other pictures by Derain, Signac, Manguin and Dupuis! In a way the QBIC program allowed me to recognize "the same palette" in this French style of the beginning of our century. The program also offers the possibility of selecting families of paintings by their forms.

The possibility of interacting at a distance with works of art is something fantastic but we must remember that this is only the beginning. There is a long way to go before esthetic pleasure can equal gazing at the original artwork. For the time being these are visual experiments in miniature, but it is not too venturesome to think that in a short time, comfortably seated in our homes, we will be able to contemplate our favorite works of art in their real size with a clarity even greater than the original, without protective glass or barriers standing in the way of some detail of interest to us. A successful effort has been made by the Toshiba Electronic Museum where the visitor can appreciate hundreds of works of art on high-fidelity digital screens that are transmitted, upon request, through a network, from an image database. However, we must acknowledge that we are a long way from perfection, that the usual images on our personal computer are far from being really attractive and if projected in actual size clarity is blurred and on the PC screen scale is irremediably lost.

Note

- 1 *Rembrandt by himself*. National Gallery. London. June–September 1999.

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